

**CLAIMS**

1. Constellation information transmitting arrangement (BiGi\_TA) for use in a multi-carrier transmitter (TX) or multi-carrier receiver (RX) of a multi-carrier system, said arrangement (BiGi\_TA) comprising means (BiGi\_PROD) for producing carrier constellation information indicative for constellations where respective carriers will be modulated with by said multi-carrier transmitter (TX), and means (BiGi\_TX) for transmitting said carrier constellation information,

CHARACTERISED IN THAT said means (BiGi\_PROD) for producing carrier constellation information is adapted to produce for at least one respective carrier subset (SUBSET1, SUBSET2, ..., SUBSET8) a set of parameter values (B1, G1; B2, G2; ...; B8, G8) from which constellations of all carriers ( $f_0 \dots f_{511}$ ,  $f_{512} \dots f_{1023}$ , ...,  $f_{3584} \dots f_{4095}$ ) in said at least one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8) can be retrieved through interpolation.

2. Arrangement (BiGi\_TA) according to claim 1,

CHARACTERISED IN THAT said set of parameter values (B1, G1; B2, G2; ...; B8, G8) consists of a first number of bits (B1; B2; ...; B8) and a first gain value (G1; G2; ...; G8).

3. Arrangement (BiGi\_TA) according to claim 1,

CHARACTERISED IN THAT said set of parameter values consists of a first number of bits, a first gain value and a second gain value.

4. Arrangement (BiGi\_TA) according to claim 3,

CHARACTERISED IN THAT said constellations of all carriers in said at least one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8) can be retrieved through linear interpolation.

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sub A47 5. Arrangement (BiGi\_TA) according to one of claims 1 to 4,

CHARACTERISED IN THAT said arrangement (BiGi\_TA) further contains means to produce a description of said at least one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8), and means to transmit said description of said at least one respective carrier subset (SUBSET1; SUBSET2; 5 ...; SUBSET8).

6. Arrangement (BiGi\_TA) according to one of claims 1 to 5,  
CHARACTERISED IN THAT N carriers are divided into M subsets of N/M carriers with successive carrier indices, N being a first integer number 10 representing a total amount of carriers used in said multi-carrier system, and M representing a second integer number whereby N is an integer multiple of M.

7. Constellation information receiving arrangement (BiGi\_RA) for use in a multi-carrier transmitter (TX) or multi-carrier receiver (RX) of a multi-carrier system, said arrangement (BiGi\_RA) comprising means (BiGi\_RX) for receiving 15 carrier constellation information indicative for constellations where respective carriers will be modulated with by said multi-carrier transmitter (TX), and means (BiGi\_DET) for determining said constellations from said carrier constellation information,

20 CHARACTERISED IN THAT said means (BiGi\_DET) for determining said constellations comprise interpolating means adapted to retrieve constellations of all carriers ( $f_0 \dots f_{511}$ ,  $f_{512} \dots f_{1023}$ , ...,  $f_{3584} \dots f_{4095}$ ) in at least one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8) from a respective set of parameter values (B1, G1; B2, G2; ...; B8, G8) that forms part 25 of said carrier constellation information.

8. Arrangement (BiGi\_RA) according to claim 7,  
CHARACTERISED IN THAT said set of parameter values (B1, G1; B2, G2; ...; B8, G8) consists of a first number of bits (B1; B2; ...; B8) and a first gain 30 value (G1; G2; ...; G8) and in that said interpolating means is adapted to determine for each carrier ( $f_0 \dots f_{511}$ ,  $f_{512} \dots f_{1023}$ , ...,  $f_{3584} \dots f_{4095}$ ) in said at least

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one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8) a number of bits equal to said first number (B1; B2; ...; B8) and a gain value equal to said first gain value (G1; G2; ...; G8).

5 9. Arrangement (BiGi\_RA) according to claim 7,

CHARACTERISED IN THAT said set of parameter values consists of a first number of bits, a first gain value and a second gain value and in that said interpolating means is adapted to determine for each carrier in said at least one respective carrier subset a number of bits equal to said first number of bits and  
10 a gain value through linear interpolation between said first gain value and said second gain value.

sub AS 7

10. Arrangement (BiGi\_RA) according to one of claims 7 to 9,  
CHARACTERISED IN THAT said arrangement (BiGi\_RA) further  
15 contains means to receive a description of said at least one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8), and means to interpret said description of said at least one respective carrier subset (SUBSET1; SUBSET2; ...; SUBSET8).